# **Stroke Exercises for Your Body**



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# **Stroke Exercises** For Your Body

"Stroke rehabilitation in America leaves much to be desired in terms of recovery and quality of life. There is a serious gap between stroke patients being discharged and transitioned to physical recovery programs. In an effort to improve recovery and quality of life, the American Heart Association has urged the healthcare community to prioritize exercise as an essential part of post-stroke care<sup>1</sup>."

With the right recovery programs that prioritize exercise for rehabilitation, stroke survivors can "relearn" crucial motors skills to regain a higher quality of life. Thanks to a phenomenon known as neuroplasticity, even permanent brain damage doesn't make disability inevitable. "There is strong evidence that physical activity and exercise after stroke can improve cardiovascular fitness, walking ability, and upper arm strength. In addition, emerging research suggests exercise may improve depressive symptoms, cognitive function, memory, and quality of life after stroke."

- Sandra Billinger, Physical Therapist at the University of Kansas Medical Center

#### Learn more about Cortical Plasticity >



### How Your Brain Recovers From a Stroke

Recovery after a stroke is possible because the human brain is capable of reorganizing and retraining itself through neuroplasticity.

When you perform repetitive physical tasks, you tap into this ability by retraining unaffected parts of your brain to perform functions that your damaged brain cells once performed. In simple terms, neuroplasticity is the process of "rewiring" the brain to perform tasks through different neural pathways.

"Some "spontaneous" recovery does occur after a stroke, but it doesn't continue forever. According to a study published in the Journal of the American Physical Therapy Association, spontaneous motor recovery<sup>2</sup> only occurs during the first 6 months of recovery. Afterwards, rehabilitation is necessary to make further progress, especially if you need to learn new skills and coping mechanisms."

To overcome the leading cause of disability, **a consistent exercise program is critical**. By using the power of neuroplasticity, stroke survivors can regain mobility and function. If you want to overcome the limitations of traditional recovery methods, you should know that exercise is your most effective tool.



### **Benefits of Exercise After a Stroke**

Exercise increases your chances of regaining function after a stroke. In fact, when stroke survivors have trouble performing daily functions, it isn't always because of the stroke itself. Brain damage also causes problems that indirectly lead to loss of physical function. After suffering a stroke, survivors who don't begin an exercise regimen will experience additional, preventable problems such as physical deconditioning and fatigue.

They may also face a variety of obstacles that make it more difficult to begin exercising, such as:

- Lack of social support
- Financial instability
- Depression
- Severity of physical symptoms
- Fatigue
- Frustration
- Confusion
- Lack of motivation

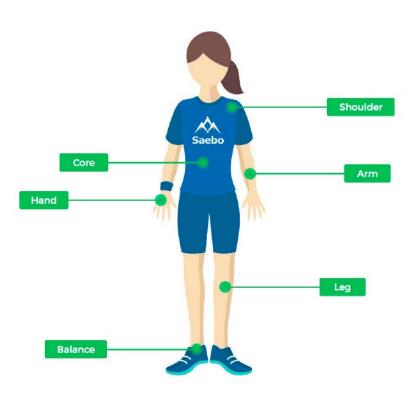
These barriers are precisely why a tailored, consistent exercise regimen is such an important

part of proper post-stroke care. When patients receive support, tools, and specific instructions to keep them active after a stroke, obstacles such as fatigue and depression will get smaller and less powerful, making it easier to continue a regimen of aerobic and strength-training exercises.

"These exercises, in turn, give patients the power to reclaim lost abilities and get back to the life they had before the stroke. According to the American Heart Association, exercising after a stroke is a crucial way to improve the following:"

- Cardiovascular fitness
- Walking ability
- Muscle strength
- Flexibility
- Coordination
- Cognitive function
- Mental health
- Memory
- Quality of life

### **Exercises for Stroke Recovery**



Any amount of physical activity is a positive step for stroke survivors. Over time, even light activity such as walking around the block or doing laundry will contribute to physical improvements and help prevent the deconditioning that leads to further deterioration. However, activities of moderate intensity are even more beneficial for your health. If you want to reclaim a specific function, for example, you can incorporate a variety of at-home exercises to target individual body parts.

Remember, a full recovery is only possible if you take direct action to reclaim function in the months and years that follow. By following an exercise program that targets specific areas and functions, you can reclaim your coordination, strength, and range of motion throughout your body. Each of the following exercises is designed to condition your body and brain in specific ways. The movements are recommended by trusted physical therapy professionals and cover the following areas of the body: shoulders, arms, balance, hands, legs, and core. Follow along with helpful illustrations as you work through the basic, intermediate, and advanced version of these post-stroke exercises.

As with any exercise program, please consult with your healthcare provider before you begin. If you notice increased pain, discomfort, or other troubling systems, stop these exercises immediately and talk to your doctor.

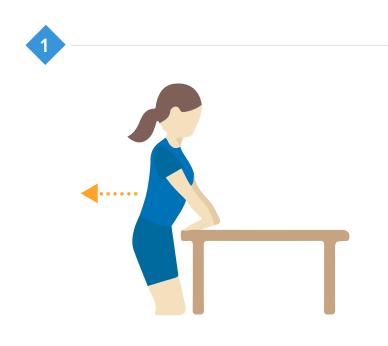
### **ARM EXERCISES**

A stroke can often make it difficult to perform simple tasks like moving the arm forward or grasping and releasing objects. Physiotherapist Simbarashe Shawe recommends eight simple exercises to help restore strength and function in the arms of stroke survivors.

Watch Arm Exercises That Restore Strength →

## **Basic Arm Exercises**

Strokes are a frightening, life-threatening medical condition, but once you begin recovering you will experience the impact on your quality of life caused by neurological damage. It's possible to retrain the brain to make up for this damage, but you must keep the affected muscle groups active. These basic level exercises are a starting point to add flexibility and mobility to your affected arm after a stroke.



#### **Inner Arm Stretch**

For this exercise, place your palms on the table and rotate your wrists so your fingers point towards your body. Keeping your elbows straight, slowly move your body backwards until you feel a stretch on the inside of the arm. Lean on the table for support if you need to.

#### Wrist and Hand Stretch

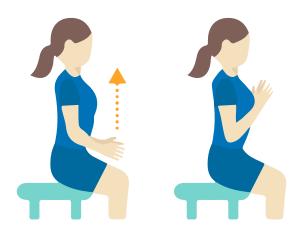
For this exercise, place your forearm on the table, with the hand over the edge of the table, palm down. First, drop the hand down, using your other hand to gently stretch the ligaments and muscles. Then, leaving your forearm on the table, lift the wrist up, down and sideways, gently stretching the extended wrist with the other hand.



## **Intermediate Arm Exercises**

Once you have gained basic flexibility in the wrist, hand, and inner arm, you are ready to work on a full range of motion for these joints. These intermediate-level exercises, which work well in conjunction with SaeboMAS and SaeboReach, can be the key to recovering the use of your arms. They help retrain the brain to make up for the neurological damage you have suffered.





#### **Elbow Stretch**

The elbow stretch focuses on restoring a range of motion to the elbow. This exercise can be done while sitting or standing. Hold the arm at a comfortable position, then carefully bend and straighten the elbows as if you are doing a dumbbell curl.

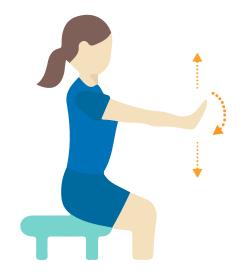
#### **Crawling Stretch**

Take up a crawling position with your elbows straight. Gently lean your body backward, keeping your arm position, until you feel a stretch on your inner arm. Hold the position and repeat.



### Intermediate Arm Exercises (cont.)



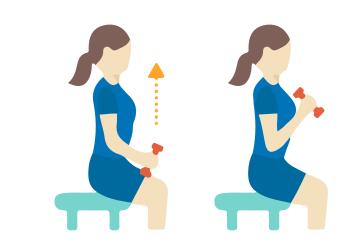


#### Wrist Motion

When you are sitting or standing, extend the elbow and rotate your wrist through a full range of motion. Continue this exercise a few times to encourage greater motion in the wrist.

## **Advanced Arm Exercises**

Muscles damaged due to a stroke are often weakened, mainly due to inactivity. This is why at-home exercise is so important. Once you have regained range of motion in your arm and wrist, you are ready to begin strengthening the muscles with these advanced exercises.

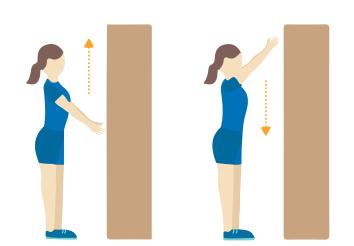


#### **Elbow Weight Training**

In a standing or sitting position, hold a small weight in your hand. Gently bend and straighten the elbow. Repeat to your endurance point. Over time, increase repetitions as the elbow strengthens.

#### **Finger Walk**

Stand facing a wall or a door. Place your fingers gently on the surface of the door or wall. Walk your fingers up the surface using a spider-like motion, then walk them back down.



### Advanced Arm Exercises (cont.)



#### Seated Push Up

Finally, sit on the ground with your knees bent and your palms on the floor, keeping your fingers pointing forward. Push through your hands to cause your bottom to lift off the floor slightly. Repeat as you grow stronger.

Combine these exercises with Saebo products for effective arm strength and range of motion improvement.

Learn More

### **BALANCE EXERCISES**

Struggling to walk or stumbling frequently is a common problem for stroke survivors, as the neurological components of balance have been damaged. Fortunately, balance is an ability that can be relearned after a stroke through therapy, rehabilitative products, and at-home exercises. Physiotherapists Beth Thornton and Kathryn Smyth suggest nine exercises to help regain stability and balance.

## **Basic Balance Exercises**

Basic level exercises for balance may seem simple at first, but they require strong neural connections to successfully complete. Start with these simple exercises as you work to rewire your mental processes. The repeated actions will build mental connections that can help restore balance. Remember, always hold onto something during balance exercises to keep yourself from falling.



#### Heel Raises (Holding On) 3 sets of 10

Find a sturdy chair or countertop you can hold on to for support. Hold on to the chair or counter, and raise yourself up onto your tiptoes, keeping your knees straight and holding your upper body tall. Lower yourself back to the floor slowly, and repeat.

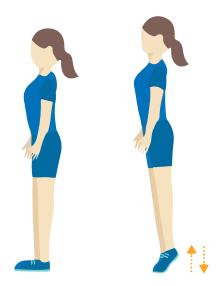
#### **Side Stepping (Holding On)** 3 sets of 10 (1 rep = both feet)

Use a counter or ledge to hold on to, or ask someone to give you a hand to hold for balance. Place tape on the floor in a straight line. Step sideways to cross the line, crossing one leg across the front of the other leg. Reverse the motion to return to the starting point, this time crossing a leg behind.



### **Intermediate Balance Exercises**

The intermediate level exercises use the same basic ideas as the basic exercises, but without something to hold onto. After practicing the basic level exercises for a while, you should be able to perform them without assistance. However, for safety, always have a counter or chair nearby to grab if you start to lose your balance.

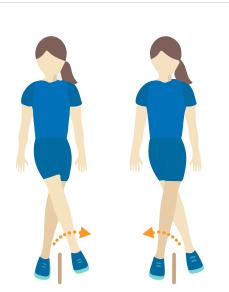


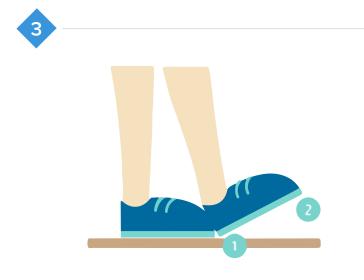
#### Heel Raises (Not Holding On) 3 sets of 10

Stand with your feet flat on the floor and your arms at your sides. Raise yourself to tiptoe, keeping your upper body and knees straight. Slowly lower and repeat.

#### **Side Stepping (Not Holding On)** 3 sets of 10 (1 rep = both feet)

To perform the side step, cross your legs across each other as you move sideways in a straight line. Go slowly to avoid falling and be ready to grab something sturdy if you lose your balance.



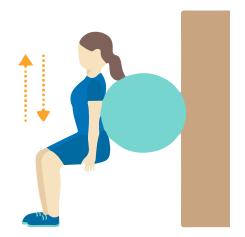


#### Heel-to-Toe Walking 20 steps (10 for each foot)

Using the straight tape line for side stepping, walk forward, placing the heel of your foot directly in front of the toe of your other foot as you walk. Continue to the end of the tape, turn, and repeat by returning to the starting point.

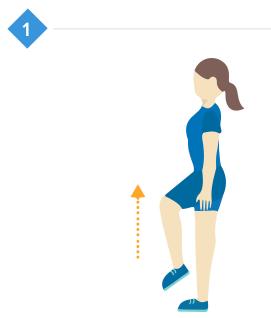
# Squats Against Gym Ball 3 sets of 10

Place an exercise ball between your back and a wall, standing tall. Slowly lower into a squatting position, holding on with one hand if needed or not holding on at all. Roll back up to a standing position and repeat.



## **Advanced Balance Exercises**

Once you start noticing improved balance, do not stop exercising. You are still building those connections. Now it's time to move on to advanced level exercises.

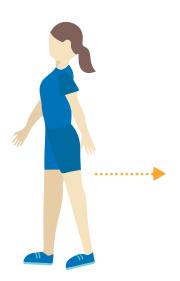


#### Single Leg Standing 3 sets of 5

Place both feet flat on the floor. Slowly lift one leg until you are balanced on the other leg. Hold for a count of 10, and slowly lower it back down. Alternate legs and repeat.

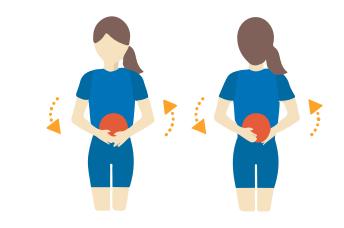
# Backwards Walking 20 steps

In a room that is free from obstacles, walk backward slowly. Try to avoid looking where you are going, but use your sense of balance and slow movements to avoid a fall. At first, perform this exercise with something close by to hold onto like a wall or countertop until you gain confidence in your abilities.



### Advanced Balance Exercises (cont.)





#### Weighted Ball Pass 3 sets of 10

Using a weighted exercise ball, slowly pass the ball from hand to hand as you circle it around your body. Start by circling the body in a clockwise motion. Then, repeat in a counterclockwise motion. Perform this exercise while standing.

Combine these exercises with Saebo products for improved balance.

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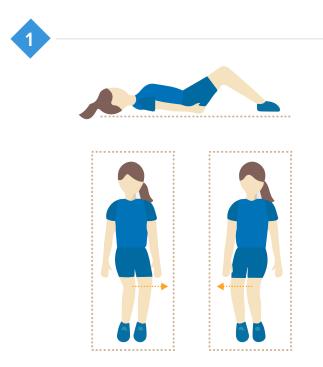
### **CORE EXERCISES**

While the focus of stroke recovery is often on the limbs and facial muscles, without a strong core, the rest of the body may suffer. By isolating and activating core muscles with nine exercises selected by Thornton and Smyth, stroke survivors can work to regain coordination and strength that benefits their whole body.

Watch Core Exercises That Build Strength and Coordination ->

## **Basic Core Exercises**

Strokes are life-threatening events that can cause irreversible neurological damage, so the recovery period is as much about retraining the brain as it is about strengthening the muscles. To regain use of your core muscles, you must keep them active in order to create the brain connections you need to improve after a stroke.



#### Knee Rolling Repeat 10-20 times

Lie on your back with your hands resting at your side. Bend your knees and place your feet flat on the floor. Roll your hips so that your knees push to the left, then to the right, then back to center.

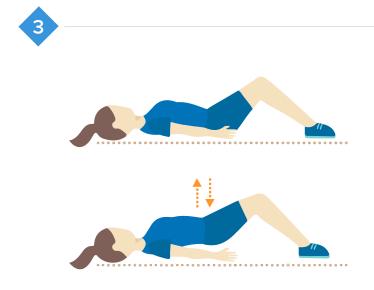
#### Single Leg Drop-Outs

Repeat 5 times per side

Lie on the floor with the hips and feet flat with the knees bent. Keep the pelvis still, using the hands to keep it in place if needed. Inhale, and drop the left knee to the left, as far as possible without lifting the pelvis, keeping the knee bent. Exhale, and draw the knee back in.



### **Basic Core Exercises (cont.)**

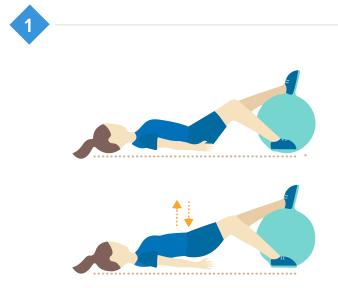


#### **Pelvic Floor Contractions** *Repeat the exercise 10 times*

Pelvic floor contractions, also known as Kegels, can help strengthen the muscles on the pelvic floor, which is the muscular base of the abdomen attached to the pelvis. First, find the muscles by imagining that you are trying to hold urine or stop from passing gas. Squeeze these muscles by lifting and drawing in, then hold for a count of three. Relax then repeat, gradually increasing the holding time until you can hold for 10 seconds. If at any point you feel the contraction relaxing, let it relax completely and rest for 10 seconds before contracting again.

## **Intermediate Core Exercises**

Once you begin building some strength, you are ready to progress in your exercise practice. These intermediate exercises will challenge a larger number of core muscles and build even more strength.

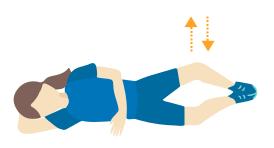


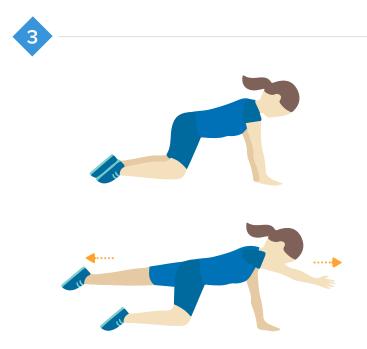
#### **Single Leg Bridging** *Repeat for 10 repetitions, then switch legs*

Lie on the exercise mat and place one leg flat on the floor with the knee bent. Place the other leg on an exercise ball. Using the core muscles, lift the pelvis off the mat and slowly lower back down.

#### Side Lying Clams Repeat 5-10 times on each side

Clams are a great exercise for your core as well as your legs. Lie down on your side with your knees bent, resting one knee on top of the other. Keeping your feet together, lift the upper knee towards the ceiling and hold your knees apart for 10 seconds. Next, slowly lower your knee back down. Be careful not to roll your hips back.



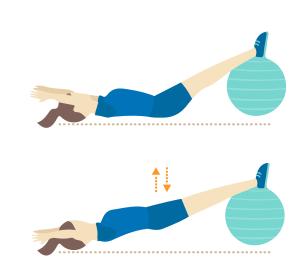


#### **Four-Point Kneeling** *Repeat for 2-3 sets of 10 reps each*

Kneel on the ground and place your hands flat on the ground so you are in a crawling stance. Contract the pelvic floor and raise one leg while lifting the opposite arm. Hold for a few seconds, and return to the starting position, repeating with the opposite arm and leg.

## **Advanced Core Exercises**

As you continue to develop your core muscles, you will be ready to add more intensity. These advanced exercises increase the intensity of the intermediate exercises so you can regain a strong, healthy core.



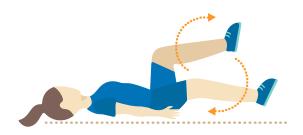
#### Bridging with Arms Above Head 10-15 times

Lie on the floor or an exercise mat with your shoulders and lower back flat on the floor. Support your legs on an exercise ball. Lift your arms above your head, then use the core muscles to lift your hips off the flooruntil your body is in a straight line from heels to shoulders. Slowly lower back down and repeat.

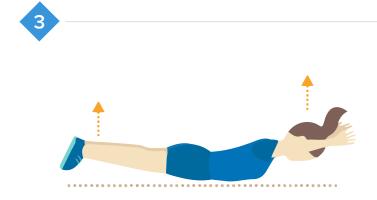
#### **Bilateral Leg Cycling**

Rest and repeat 10 times

Lie on the floor and lift the legs off of the ground, holding them in a cycling position. Then, cycle as if you are riding a bicycle in the air.



### Advanced Core Exercises (cont.)



#### Superman Pose Repeat 10 times.

Imagine superman flying through the air. Now, lay on the floor on your stomach and take this same position, arms and legs extended. Hold to strengthen the core muscles in your back, and relax. Hold the position for 2-5 seconds and repeat 10 times.

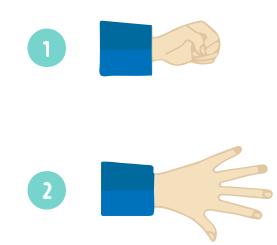
### HAND EXERCISES

When stroke survivors lose function and dexterity in the hands, simple daily tasks can seem like insurmountable obstacles. Sarah Lyon, occupational therapist, advocates three simple, at-home exercises to help stroke survivors regain the use of their hands.

Watch Hand Exercises That Will Strengthen Your Grip →

### **Basic Hand Exercise**

A stroke often affects the ability of the brain to communicate with other areas of the body. While some of the neurological damage to the brain after a stroke is irreversible, it's possible to retrain some parts of the brain to take over the movements and activities once controlled in the damaged section. If you are struggling to move your hands, start with this basic-level exercise, aimed at helping your brain re-learn how to control the most basic hand movements. If you are struggling to make a fist and release it, the SaeboGlove and SaeboFlex can help with positioning and reopening as you build up control with this simple exercise.



#### Make a Fist

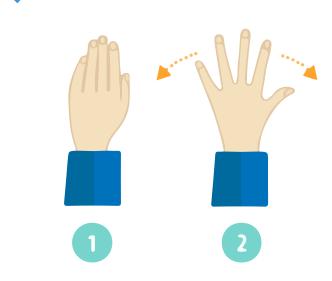
To begin retraining your brain and hands, make a fist by wrapping your thumb over your fingers. Then, slowly open and spread your fingers wide.

How wide you spread your fingers and how long you hold the stretch will depend on your goal. If you need to stretch the hand and increase range of motion, slowly make a fist and open it until you feel a stretch, but no pain. Repeat this slow and steady movement 10 times per session.

If you have decent range of motion, but need to improve strength, open and close your fist repeatedly and steadily for 30 seconds. Then give your body the chance to rest, and repeat the movement for an additional 30 seconds.

### **Intermediate Hand Exercise**

If you've mastered making and releasing a fist and feel that some strength is returning to your hand, then you are ready to move towards building the range of motion of the fingers themselves. This intermediate level exercise helps achieve that goal.



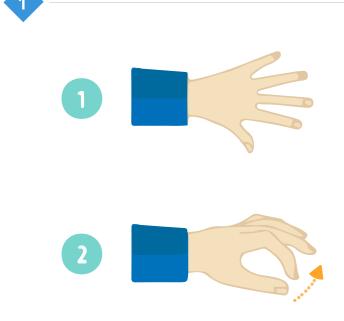
#### **Five Finger Spread**

For this exercise, place your hand in front of you with the fingers straight and held close to one another. Carefully and gently spread them apart. When you are done with the movement, your hand will look like you just counted the number five on your fingers, with all of the fingers spaced apart from one another. Then, bring the fingers back together, and repeat the action slowly 10 times.

This exercise is called abduction and adduction. It helps the hand re-learn how to move the fingers. It also builds strength and flexibility in the hand. As you perform this exercise, remember that the goal is to practice slow, steady and controlled movement. Do not try to rush through the exercise.

### **Advanced Level Hand Exercise**

Once you can successfully make and open a fist and spread your fingers from side to side, you are ready to try Lyon's third and final exercise: Tip to Tip. This advanced exercise focuses on adding dexterity to the strength and flexibility you have already mastered.



#### **Tip to Tip**

Start this exercise with your hands in an upright position. Spread your fingers comfortably, not the point that you feel a stretch, but just comfortably apart.

Once you are in position, carefully bring the tip of your thumb to the tip of your pointer finger. Your hand should look like you are making the "OK" sign. Release this, and open the hand wide. Now, repeat the movement, but touching the middle, ring and pinky fingers respectively. Repeat a total of five times.

# **3 EVIDENCE-BASED STEPS FOR RECOVERING HAND FUNCTION**

MOVE

Creating active *movement* is critical - if you don't use it, you will lose it!





SaeboStim Go® For all Patients (creates active muscle movement)

Learn More →

SaeboGlove® For Patients with Minimal Tightness

Learn More →



OR

SaeboFlex® For Patients with Significant Tightness

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### REST

You can't exercise all day - but you can make progress *even while you're resting*: passive stretching and passive stimulation are vital to protecting and promoting mobility!







SaeboStretch® For Passive Stretching (can be worn day or night)

Learn More →

SaeboStim Micro<sup>®</sup> For Passive Stimulation (stimulates neural connections with no muscle movemtnt) Learn More →



### IMAGINE

Belive it or not, building *stong mental images* is one of the most important (and affordable!) ways to maximize your recovery... even when it involves tricking your brain with a mirror!





Saebo Mirror Box® Trick your brain to overcome artificial barriers

Learn More →



**SaeboMind®** ——— Relaxing yet powerful audio recordings for mental rehearsal of everyday tasks.

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## **LEG EXERCISES**

Difficulties standing and walking after a stroke can be related to balance problems, but leg strength and mobility are also contributing factors. Richard Sealy recommends a series of low-impact strength and stretching exercises to help regain muscle in the legs and improve range of motion during stroke recovery.

## **Basic Leg Excercises**

Following a stroke, simple actions, like standing and walking, become difficult to perform because balance, coordination, and strength, have all changed. Exercises focusing on standing, balance, and the weakened muscles in your core and hips are vital to you regaining your quality of life after stroke. Try these *Basic Leg Exercises* to help restore your ability to perform functional tasks in standing. Always remember to hold on to a table or other similarly stable surface to avoid a fall.



#### Basic Level Standing and Balance Exercise Repeat 10 times

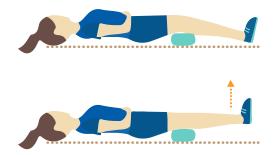
Hold onto a stable surface, standing straight and tall while you transfer your weight to one side. Swing the other leg to the side. Use your balance to hold this position for 10 seconds. Slowly lower your leg back down. Repeat 10 times, as long as you have the strength, and then switch legs.

# 2

### Basic Bridging Exercise

Repeat 10 times

The basic bridging exercise, called "Inner Range Quad Movement", builds strength in the thigh muscles. To perform this exercise, lie down and place a pillow or rolled towel under the knee joint. Then, press the back of the knee into the pillow or rolled towel to lift your heel off the floor.



### **Basic Leg Exercises (cont.)**





#### **Basic Clams Exercise – In Sitting**

Before starting Clams, you must stretch the calf muscle and build coordination in the lower body. In a sitting position, create a stirrup around one foot using a towel, belt or exercise band, and place the stirrup around the ball of the foot. Gently pull the stirrup up towards your body to stretch the calf muscle. Then, pull it with the outer hand to turn the foot out, continuing to stretch the muscle.

## **Intermediate Leg Excercises**

As you practice and perform your repetitive exercises, your neural connections are growing, and the exercises become more effortless. When you can complete the *Basic Leg Exercises* without struggling, it is time to move on to the *Intermediate Leg Exercises*. These exercises require more balance and coordination and will challenge many parts of your lower body. Please remember to hold on to a stable surface and perform your exercises safely to avoid a fall.



#### Intermediate Standing and Balance Exercises Repeat 10 times

Once you have mastered the first exercise, move on to the intermediate level. Again, hold on to a stable surface, keeping your back tall and straight. Transfer your weight to one leg, and bring the other leg up in front of you, bending the knee. Hold this position for a count of 10, and slowly lower it back down. Repeat 10 times, then switch legs.



#### Intermediate Bridging Exercise Repeat 5-10 times

"Ski Squats" take bridging exercises to the next level. For this exercise, lean against a flat wall, placing your feet in front of you. Using the wall to support your weight and your back, slowly bend your knees to lower yourself down. Hold this position for 10 seconds, if you can. Slide back up, supporting your weight on the wall, until you are in a standing position.



### Intermediate Leg Exercises (cont.)



#### Intermediate Clams Exercise Repeat 5-10 times

Once you have gained some flexibility, you are ready for the Clams exercise. Lie down on your side, and bend your knees, resting one on top of the other. Then, while you keep your feet together, lift the upper knee away from the other knee, holding them apart for a count of 10 seconds. Repeat 5-10 times on each side. Slowly lower your knee back down. While performing this exercise, make sure that you do not roll your hips back.

## **Advanced Leg Excercises**

As you perform your *Intermediate Leg Exercises* regularly, they will become easier. At the point when your strength, balance, and coordination have all improved, and you have minimal risk of falling, we recommend you move on to the *Advanced Leg Exercises*. Please continue to be safe with your exercises to avoid a fall. Don't forget to be performing functional tasks around the house, work, etc. as this will help you improve your strength, balance, and coordination, even faster.



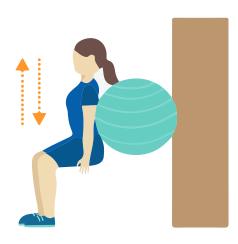
#### Advanced Standing and Balance Exercises Repeat 10 times

Finally, progress to the advanced level. You may hold on to something for support. This time, stand straight and tall and transfer your weight to one leg. Swing the other leg out behind you as far as you can. Hold for 10 seconds, if you can, and lower it back down slowly. Repeat 10 times and switch legs.

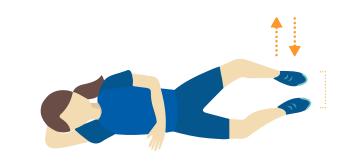
This progression of exercises will strengthen the hip muscles and improve balance, so you can regain normal use of your legs. This exercise series pairs well with the Saebo MyoTrac Infiniti biofeedback triggered stimulation system.

#### **Advanced Bridging Exercise**

To take bridging exercises to the advanced level, repeat the "Ski Squat" with a gym ball placed between yourself and the wall while bending your knees into the squat position.



### Advanced Leg Exercises (cont.)



#### Advanced Clams Exercise Repeat 5-10 times

After mastering Clams, take it to the next level by lifting the knee and the foot of the upper leg. Again, hold the position for a count of 10 seconds. Lower it back down. Repeat 5-10 times for each leg to build strength and range of motion.

Combine these exercises with Saebo products for improved balance.

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### **SHOULDER EXERCISES**

Many daily movements depend on shoulder strength such as grasping and releasing objects, moving the arms, and supporting weight with the arms. Occupational therapist Hoang Tran recommends six effective techniques based on the principles of gravity compensation to speed up recovery in the shoulders after a stroke.

Watch Shoulder Exercises That Will Speed Up Recovery →

## **Basic Shoulder Exercises**

Though strokes are life-threatening and often cause irreversible neurological damage, you may be able to retrain other regions of your brain to make up for this damage. Your muscles must remain active if you hope to use them again, and some exercises aim to achieve this specific task. These two basic-level exercises are recommended for people who still struggle to move or use their shoulder after a stroke.

If you have completely or partially lost function – or even sensation – on one side of your body after your stroke, you still have a very powerful tool at your disposal: the other side of your body. The first exercise will help you use your functioning hand to stretch and stimulate your shoulder muscles. The second focuses on your shoulders themselves, specifically the muscles that allow you to move your shoulder blade on the unaffected side of your body.

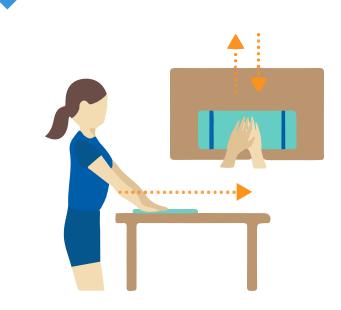




#### Shoulder Shrug 15-20 times

Sit or stand in front of a mirror so that you can clearly see your entire upper body. Now, lift your unaffected shoulder up in a shrugging motion, just as you would if you didn't know the answer to a question. Instead of simply letting it drop again, roll your shoulder back. As you do so, your shoulder blades should get closer together. Repeat this exercise several times each day.

### **Basic Shoulder Exercises (cont.)**



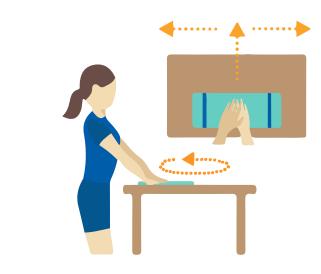
#### **Towel Slide (Basic)** *Repeat 10 times*

Get a towel and sit down at a table, desk, or other flat surface. Fold or spread the towel, and make sure it's on the table immediately in front of you. Now, place your affected hand on the towel and put your unaffected hand directly on top of it. Apply enough pressure to keep your hands together, then use your hand to slide the towel away from you, toward the middle of the table.

As your hands move forward, your shoulders will also stretch forward, with the towel reducing friction and allowing your shoulder muscles to stretch and strengthen. If you feel comfortable leaning forward with your upper body, do so in order to slide the towel even farther forward. If you can do this until your arms are almost parallel with your body, the extra movement will allow you to stretch your shoulders at shoulder level, paving the way for a greater range of motion.

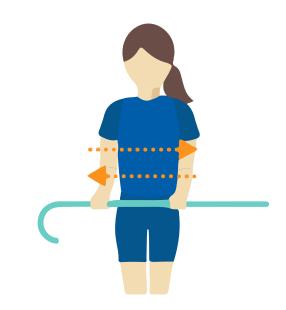
### **Intermediate Shoulder Exercises**

These intermediate exercises are ideal if you've already made some progress toward shoulder mobility and control. If you cannot perform them, you may want to continue repeating the basic-level exercises, but don't forget to continue making attempts at these exercises too. They will require a towel, a table, and a cane or any other long, light object.



#### **Towel Slides (Intermediate)** *Repeat the exercise 10 times each direction*

This exercise is very similar to the basiclevel towel slide, but it incorporates a bigger range of motion by challenging you to stretch your shoulder muscles in more than one direction. Start by sitting at a table with a towel and placing your affected hand on it, as before. Now use your other hand to slide your hand forward, but don't simply slide it back toward you. Instead, follow this movement by sliding it from side to side. Now slide it back toward you and continue sliding the towel from side to side. Finally, incorporate all of these movements into a series of circular motions, alternating between clockwise and counterclockwise.



#### **External Rotation with Cane** *Repeat 10-20 times.*

You'll need a cane or lightweight umbrella for this exercise. Hold the cane with both hands in front of your body with your arms bent at a 90-degree angle at your sides and your palms facing down. Next, push the cane outward to your left and right without dropping your arms, so that the 90-degree angle remains consistent. Repeat 10-20 times. This exercise will improve your ability to perform external rotations with your shoulders, which are required for a significant number of everyday tasks.

### **Advanced Shoulder Exercises**

Finally, a couple of advanced exercises are particularly useful for people who can already grasp objects with their affected hand and move their affected shoulder. If you still haven't regained complete range of motion in both shoulders, but you have enough strength and function to grab and reach in different directions, you may find these helpful. To perform them, you'll need at least five or six cups that can be stacked. Disposable plastic or paper cups are usually the most effective, because they're more lightweight than glasses or hard plastic cups.



#### **Behind-the-Neck Cup Pass**

Sit at a table and stack the cups right in front of you. Before you begin, remind yourself to keep looking forward throughout the exercise. It may help to train your sights on one specific point ahead of you, such as a painting on the wall or your own reflection in the mirror. Now, grab the first cup from the stack. While continuing to look forward, pass the cup behind your neck and use your other hand to retrieve it and set it back down on the table. Continue doing this until you've passed the entire stack of cups from one hand to the next.

#### **Behind-the-Waist Cup Pass**

Stand in front of the table, or sit on a stool or backless chair. Re-stack the cups on the table, and bring the first one behind your waist, passing it along the top of your pants line. Retrieve and replace it with the other hand, and repeat.





### **RECLAIM YOUR INDEPENDENCE**

"Stroke survival rates have improved a lot over the last few years. Stroke was once the third leading cause of death<sup>3</sup> in the United States, but it fell to fourth place<sup>4</sup> in 2008 and fifth place in 2013. Today, strokes claim an average of 129,000 American lives every year. Reducing stroke deaths in America is a great improvement, but we still have a long way to go in improving the lives of stroke survivors.

Stagnant recovery rates and low quality of life for stroke survivors are unfortunately very common. Just 10% of stroke survivors make a full recovery. Only 25% of all survivors recover with minor impairments. Nearly half of all stroke survivors continue to live with serious impairments requiring special care, and 10% of survivors live in nursing homes, skilled nursing facilities, and other long-term healthcare facilities. It's easy to see why stroke is the leading cause of long-term disability in the United States. By 2030, it's estimated that there could be up to 11 million stroke survivors in the country."

Stroke survivors do not have to assume that the struggles they have are permanent. Qualityof life can be preserved with a proactive approach to stroke recovery. These at home exercises for stroke recovery combined with Saebo products can be some of the mosteffective techniques to reclaim your independence. Take back control and put recovery in your own hands with the help of Saebo and these exercises.

All content provided on this exercise guide is for informational purposes only and is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. If you think you may have a medical emergency, call your doctor or 911 immediately. Reliance on any information provided by the Saebo website is solely at your own risk.

# **NO PLATEAU IN SIGHT**

An appropriate home-based treatment program is essential to maximizing your recovery. At Saebo, we have pioneered a complete range of evidence-based solutions designed to challenge you throughout all stages of your recovery.



#### SaeboGlove

A low-profile device helping clients with neurological and orthopedic injuries incorporate their hand functionally in therapy and at home. Learn More →



#### SaeboFlex & SaeboReach

Functional, dynamic orthoses designed to allow clients with upper extremity spasticity to grasp and release in therapy and at home.





#### SaeboStretch

A comfortable, dynamic resting hand splint designed to prevent joint damage, maintain bone alignment, and improve range of motion.

Learn More →

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#### SaeboStim Micro

A device that provides low-level sensory electrical stimulation to the arm and hand using a specialized Electro-Mesh Garment.

Learn More →



#### SaeboStim Go

A simple wireless electrical stimulation device for shoulder subluxation as well as other parts of the body.



#### **Saebo Mirror Box**

A scientifically proven treatment tool used to speed up and improve motor function and sensation and decrease the severity of stroke and other neurological disorders.

Learn More 🔸



#### SaeboStep

A lightweight, uniquely designed footdrop brace that provides convenience and comfort while offering optimum foot clearance and support during walking.

Learn More →



#### SaeboMAS

A zero-gravity mobile arm support designed to help clients with weakened shoulders perform exercises and daily functional activities in therapy and at home.



#### Learn More →

#### Saebo MyoTrac Infiniti

A biofeedback triggered electrical stimulation system providing volitionalbased neuromuscular re-education.

Learn More →

#### SaeboVR



A one-of-a-kind virtual ADL (activities of daily living) rehabilitation system specifically designed to engage the client in both physical and cognitive challenges involving daily functional activities.

Learn More →

#### SaeboReJoyce



An upper extremity virtual reality workstation designed for recovery of impaired arm and hand function for orthopedic and neurological clients.

Learn More 🔸

# REFERENCES

1. Preidt, R. (2014, May 20). Exercise Aids in Stroke Recovery. Retrieved from <u>https://www.webmd.com/stroke/news/20140520/exercise-aids-in-stroke-recovery</u>.

2. Mang, C. S., Campbell, K. L., Ross, C. J. D., & Boyd, L. A. (2013, December). Promoting neuroplasticity for motor rehabilitation after stroke: considering the effects of aerobic exercise and genetic variation on brainderived neurotrophic factor. Retrieved from <u>https://www.ncbi.nlm.nih.gov/</u> <u>pmc/articles/PMC3870490/</u>.

3. Xu, J., Kochanek, K. D., Murphy, S. L., & Tjeda-Vera, B. (2010). Deaths: Final Data of 2007. National Vital Statistics Report, 58(19), 1–136. Retrieved from <u>https://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\_19.pdf</u>.

4. Heron, M. (2013). Deaths: Leading Causes for 2010. National Vital Statistics Reports, 62(6), 1–96. Retrieved from <u>https://www.cdc.gov/nchs/</u> <u>data/nvsr/nvsr62/nvsr62\_06.pdf</u>.